

DZHEOMRDZHI DZE, G.

Meat industry of Georgia. Mias.ind.SSSR 26 no.5:14-16 '55.
(MLRA 9:2)

1. Ministr premyshlennosti myasnykh i mlechnykh produktov
Gruzinskoy SSR.
(Georgia--Meat industry)

CHOGOVADZE, G.I., red.; GOMELAURI, N.G., red.; DZHOMARDZHIDZE, G.S., red.;
GABUNIYA, A.A., red.; CHIAYEV, I.S., red.; GANGIA, A.K., red.;
ABESADZE, N.K., red.; YAKIMOVA, A., tekhn. red.

[Forty years of Georgian industries, 1921-1961] Promyschlennost' Gru-
zii za 40 let, 1921-1961 g.g. Tbilisi, izd-vo "Zaria Vostoka,"
1961. 253 p.
(MIRA 14:8)

1. Georgia. Ekonomicheskiy administrativnyy rayon. Sovet narodnogo
khozyaystva.

(Georgia—Industries)

BARABADZE, I.I.; BAKRADZE, G.S.; BERIDZE, G.I.; VAKHVAKHISHVILI, N.I.;
GABUNIYA, G.A.; GABUNIYA, Sh.V.; GANGIYA, A.A.; COGOBERIDZE, Ya.A.;
DZIMISTARISHVILI, A.I. [deceased]; ZHAMENSKIY, K.F.; KVANTALIANI,
N.A.; NIKOLAYSHVILI, V.S.; TOPADZE, L.I.; KHUNTSARIYA, A.G.; YAKO-
BASHVILI, N.Z.; DZHOMARDZHIDZE, G.S., red.; ROYNISHVILI, N.I., red.;
FRITYKINA, L.A., red.; KISINA, Ye.I., tekhn. red.

[Food industry of the Georgian S.S.R. during the last 40 years]
Pishchevaya promyshlennost' Gruzinskoi SSR za 40 let. Moskva,
Pishchepromizdat, 1961. 162 p. (MIRA 14:9)
(Georgia—Food industry)

DZHOMARDZHIDZE, G.S., red.

[Food industry of Georgia during the past 40 years]
Pishchevaia promyshlennost' Gruzinskoi SSR za 40 let.
Moskva, Pishchepromizdat, 1961. 162 p. (MIRA 15:3)
(Georgia—Food industry)

DZHONDZHOROV, At.; BUCHVAROV, S.N.

On the acceleration distribution of a solid at the most general motion in space. Godishnik mash elekt 10 no.1:137-146 '61
(publ. '62.)

BUCHVAROV, St.; DZHOMDZHOROV, At.

On the acceleration distribution of the points of a solid at
the most general motion in space. Godishnik mash elekt 10
no.1:147-152 '61 (publ. '62).

DZHOMEV, A.

"Preventing the Burning of Fireproof Walls in Boiler Furnaces." p. 13
(RATSIONALIZATSIIA. Vol. 4, No. 10, Oct. 1954; Sofiya, Bulgaria.)

So: Monthly List of East European Accessions, (EEL), LC, Vol. 4, No. 4,
April 1955, Uncl..

DZHONEV, Tsvetan, inzh.; DOBREV, Iosif, inzh.

The best ceramic blocks for masonry. Stroitelstvo 10 no. 2:
28-29 Mr-Ap '63.

Dzhongova, S.

Printing textile fabrics of artificial fiber with acid dyes. p. 42

TEKSTILNA PROMISHLENOST, Sofia, Bulgaria, Vol. 8, no. 4, 1959

Monthly list for East European Accessions (EEAI) LC. Vol. 8, No. 10, Oct. 1959
Uncl.

DZHONOV, Iv., d-r.

Anesthetization in surgery. Nauka i tekhnika 15 no.6:
10-11 Je'63.

VASILEV, N., inzh.; BOGATEV, K., dots.; DZHOMOVA, E., inzh.

Experimental studies of the influence of environment
temperature on the working of fluorescent lamps.
Elektrotenergiia 14 no.11:5-9 N'63.

VASILEV, N. I.; BOGATEV, K. I.; MARINOV, IU. P.; DZHONOVA, E. A.

A device for automatic switching on of street lighting
depending on the level of the natural horizontal illumina-
tion and the exterior temperature. Godishnik mash elekt
12 no. 2:5-18 '62 [publ. '63].

KHERMAN, O., inzh; DZHONNOVA, E., inzh

Switching to the higher voltage in the average-voltage cable
network of the city of Sofia. Elektroenergia 15 no.8:12-15
Mr#64

1. "Elektrosnabdiavane - stolichno", Sodia.

BUDEVSKI, O.; DZHONOVА, L.

Complexometric determination of copper. Zav. lab. 30 no.9:1066-
1068 '64.
(MIRA 18:3)

1. Institut obshchey i neorganicheskoy khimii Bolgarskoy Akademii
nauk.

FONAREV, S.F., kand.tekhn.nauk; KUL'BAKH, A.A., kand.tekhn.nauk; DZHONSON,
V.A., inzh.

Antifriction properties of materials made of graphite. Mash-
inostroitel' no.8:41-42 Ag '59. (MIRA 12:11)
(Nonmetallic bearings)

45247
S/756/61/000/001/001/004

10. P200

AUTHORS: Fonarev, S. F., Kul'bakh, A. A., Dzhonson, V. A.

TITLE: On the investigation of the antifriction properties of stainless steel in unlubricated operation.

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metody ispytaniy detalej i materialov mashin i priborov. no.1, 1960, 5-16.

TEXT: The MIFI (Moscow Engineering-Physics Institute) has investigated experimentally the behavior of sliding pairs of stainless steel (SS). The objective of the investigation is a better understanding of the frictional process in cylindrical hinge supports in structures in which organic greases and acid- and alkali-resistant lubricant materials cannot be employed. More specifically, the tests were made to determine the seizing pressure, q_{max} , and the friction coefficient (FC) as a function of the sliding speed. The specimens were in the form of cylindrical pins and fitted bushing sectors or pads made of 1X18H9T (1Kh18N9T) austenitic steel and the 3X13 (3Kh13) and X18 (Kh18) Cr steels. The specimens approximated the shape of bearings in which low-speed sliding occurs in conditions of boundary and dry friction. The pairs were washed with CCl_4 . The inception of seizing is signaled by a sharp increase in frictional moment. Three sets of test

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On the investigation of the antifriction properties ... S/756/61/000/001/001/004

were made: (a) Pairs of like composition; (b) pairs with a hard pin and a softer bushing pad; (c) pairs with a hard bushing pad and a softer pin. The tests results are summarized in one full-page and one two-page table. Seizing at $v=0.06$ m/sec occurs even at low specific pressure ($q = 2$ kg/cm²), but only several hours after the start of the test. The initial FC is low (0.2-0.22) and, if no seizing occurs, increases to a maximum after 15-25 min. The greater the pressure, the shorter the time required for seizure. At $q = 1$ kg/cm² and $v = 0.3$ m/sec, seizing occurs directly upon commencement of the motion. Thus, a 1Kh18N9T/1Kh18N9T contact without lubrication is not practicable for cylindrical supports. In the tests at $v = 0.3$ m/sec it was found that at a certain value of the pressure a dark-brown layer or film begins to form, whereupon the FC almost doubles. No seizing occurs, and the layer, apparently, acts as a lubricant. Comparison of the test data obtained with SS and with C steel (CS), show that the SS is more prone to seizing than the CS ($q_{max/SS} = 5$ kg/cm² against $q_{max/CS} = 15-30$ kg/cm² at $v = 0.3$ m/sec). The FC of the two nonhomogeneous pairs are about equal, but the wear of the hard part is smaller in the hard-pin, soft-bushing, pair. Tests with nonhomogeneous pairs at $v = 0.06$ m/sec (results tabulated) manifested formation of a dark layer and no seizing, but an appreciable increase in surface roughness (profilographs "before" and "after" are shown). Tests with Kh18-steel rollers ($H_{RC} > 50$) with a rolling

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On the investigation of the antifriction properties ... S/756/61/000/001/001/004

speed of 0.3 m/sec and a simultaneous sliding speed of 0.045 m/sec, evinced dark-layer formation only at pressures in excess of 80 kg per running cm of roller length. The formation of the dark layer or film is attributed to oxidizing wear at local temperatures of the order of 500-525°C. In summary, the use of unlubricated cylindrical support hinges of SS is severely limited to small loads and small sliding speeds. Of the pairs tested, optimal results were obtained with the Kh18 - Kh18 and 3Kh13 - 3Kh13 pairs. Pairs made of 1Kh18N9T are absolutely unsuitable for practical use. The formation of a dark layer increases the suitability of a SS pair. The initial surface finish is of little consequence, since the surface is roughened appreciably in use, even at low pressures. The friction coefficient attains 0.3-0.4 in dry friction without dark-layer formation, 0.55-0.7 in dry friction with dark-layer formation. The nature of the steels of the pair is inconsequential. Wide-angle bushings (which embrace more of the cylindrical pin) are not suitable for SS support hinges, since only a small area is actually carrying the load, at a pressure much in excess of the apparent mean value. Narrow-angle bushing pads, which sit on top of the pin and ensure a good contact, are more favorable. There are 4 figures, 3 tables, and 3 Russian-language Soviet references.

X

ASSOCIATION: None given.

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45248

S/756/61/000/001/002/004

11.9500

AUTHORS: Fonarev, S. F., Kul'bakh, A. A., Dzhonson, V. A.

TITLE: Experimental investigation of the antifriction properties of carbon- and graphite-based materials operating in dry wear.

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metody ispytaniy detalej i materialov mashin i priborov. no.1. 1961, 29-34.

TEXT: The objective of the investigation was the determination of the materials properties stated in the title, with especial reference to the exclusion of lubricated plain bearing or rolling-contact bearings in certain atomic-energy, jet-engine, high-speed automatic-machine, and chemical-machinery applications. The imperviousness and antifriction properties of carbon (C) and graphite (G) materials employed in unlubricated plain bearings for such applications are enhanced by their impregnation with liquid metals and alloys: Cu, Pb, bronze, babbitt, et al. (in the USSR such work has been done by G. K. Bannikov, V. D. Belogorskiy, I. V. Levin, and I. M. Sigarev). Such materials are used to form plain-bearing bushing for dry-wear operation. Tests of type-15Д(D) and 15E(Ye) C-G materials were performed in the lab of the School of Machine and Tool Components of the MIFI (Moscow Engineering-Physics Institute). The wear resistance, temperature (T) behavior, friction coefficient (FC), and friction moment were determined as functions of the specific pressure (SP). The C-G material was shaped into a semicylindrical bushing which rested on a X18 (Kh18) steel journal 30 mm diam ($H_{RC} = 54-56$). A Cr-Al thermocouple measured

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Experimental investigation of the antifriction ...

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the T at a depth of 0.2-0.3 mm from the friction surface within the highly heat-conductive C-G material. The graphitized material 15Ye without any impregnation operated satisfactorily at $v = 0.3$ m/sec up to a SP of 20 kg/cm² (FC 0.27). These characteristics were measured after a 7-8-hr work-in period, when the mating surface had acquired a smooth, glossy finish. Pb impregnation of 15Ye material improves its antifriction properties significantly; paired with a Kh18 journal this material operates well at a SP up to 300 kg/cm² and speeds up to 0.7-0.8 m/sec, with a bushing wear of less than 0.66 mg/cm².hr. The FC diminishes characteristically at an observed T of 140-150°C at which the plasticity of Pb increases sharply, thereby affording a measure of lubrication. The Pb impregnation becomes really effective at SP in excess of 30 kg/cm². Preliminary working-in of the pair at SP of 15-20 kg/cm² is an indispensable requirement for satisfactory operation. The effect of Pb impregnation of 15D material is not comparably favorable. Wear increased appreciably at SP of 15 kg/cm², with a further steep increase at 25 kg/cm². The minimal FC is 0.35. The T grows monotonously and attain 280°C at SP 30 kg/cm². At 140-150°C the wear increases sharply, the FC drops. Max operating SP is 15-18 kg/cm² at $v = 0.3$ m/sec. There is no appreciable wear on the Kh18 journal with either type of C-G bushing. There are 5 figures; no tables or references.

ASSOCIATION: None given.

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45249
S/756/61/000/001/003/004

11.9500

AUTHORS: Fonarev, S. F., Kul'bakh, A. A., Dzhonson, V. A.

TITLE: Investigation of the antifriction properties of the graphite-based material as $\text{AlI}500\text{-B83}$ ($\text{AGI}500\text{-B83}$) and $\text{AlI}500\text{-Cu}$ ($\text{AGI}500\text{-Cu}$) operating in dry wear.

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metody ispytaniy detaley i materialov mashin i priborov. no.1. 1961, 35-46.

TEXT: Tests were made with the babbitt-impregnated $\text{AGI}500\text{-B83}$ and the Cu-impregnated $\text{AGI}500\text{-Cu}$ graphite (G) materials developed by Moscow Electrode Plant. Photos of the microstructure (unetched) are shown. The babbitt permeates the pores of the parent material more fully than the Cu. The tests at the lab of the School for Machine and Tool Components of the MIFI (Moscow Engineering-Physics Institute) were made to determine the friction coefficient (FC) as a function of specific pressure (SP) at various sliding speeds (steady-state only), also the temperature (T) behavior and intensity of wear. The standard testing machine was modified to permit measurement of the friction moment, FC, and wear over a greater range of speeds and loads (exploded perspective view shown). The bushing-sector holder is spherically self-centering and is equipped for Cr-Al thermocouple T measurement 0.2-0.3 mm within the bushing sector. The journal is a 30-mm ODiam cylinder of X18 (Kh18) steel ($H_{RC} = 52-54$). Bushing and journal were worked in at 35 kg/cm² and 0.3 m/sec dark-brown glossy contact surface was developed (minimal time 1.5-2

— FONAREV, S.F.; KUL'BAKH, A.A.; DZHONSON, V.A.

Antifriction material based on graphite impregnated with
polytetrafluoroethylene. Metod.isp.det.mash.i prib. no.2:3-9
'62. (MIRA 16:4)
(Graphite) (Ethylene polymers) (Friction materials)

FONAREV, S.F.; KUL'BAKH, A.A.; DZHONSON, V.A.

Unit for testing worm gears. Metod.isp.det.mash.i prib. no.2:
10-15 '62. (MIRA 16:4)
(Gearing, Worm--Testing)

FONAREV, S.F.; KUL'BAKH, A.A.; DZHONSON, V.A.; BELOUSOVA, T.T.

Graphitized materials impregnated with epoxy resin. Metod.isp.
det.mash.i prib. no.2:16-28 '62. (MIRA 16:4)
(Friction materials)

VORONIN, V.V.; TATISHVILI, I.Ya.; DZHOBENADZE, A.V.

Valdimir Kaplanovich Zgenti; 60th anniversary of his birth and 35th anniversary of his scientific, pedagogic, and organisational activities. Arkh. pat., Moskva 14 no.3:99-101 May-June 1952. (CIML 23:2)

1. Zgentin is Head of the Department of Pathological Anatomy at Tbilisi Medical Institute. Also is Professor, Honored Worker in Science, and Active Member of the Academy of Sciences Georgian SSR.

USSR/General Problems of Pathology - Tumors

U-4

Obs Jour : Rof Zhur - Biol., No 7, 1958, No 32644

Author : Dzhorjashvili A.V., Tolinc A.V.

Inst : Not Given

Title : On the Problem of Development of Cancer From Stomach Ulcer.

Orig Pub : V sb.: Klinika i lecheniye zaboliveniy zheludka. Ordzhonikidze, 1956, 20-24.

Abstract : Macro- and micromorphological studies were reviewed of 81 cases of stomach cancer and 56 cases of chronic stomach ulcers, 11 cases of peptic ulcers of anastomosis after resection and 131 cases of callous ulcer of the duodenum. The development of cancer from stomach ulcer was established in 11 cases (from 56 callous ulcers of the stomach - in 7 cases, and from 81 cancerous tumors of the stomach 0 in 4 cases), which comprised 18.3%. During callous ulcers of the duodenum and during peptic ulcers which anastomosed the development of cancer was not found. For the development of cancer, the

Card : 1/2

USSR / Human and Animal Morphology (Normal and Patho- S-3
logical). Digestive System.

Abs Jour: Ref Zhur-Biol., No 17, 1958, 79051.

Author : Chachava, M. K., Dzhorbenadze, A. V.

Inst : Not given.

Title : On the Pathomorphology of the Pancreas During
an Ulcerous Illness.

Orig Pub: Tr. In-ta eksperim. i klinich. khirurgii i
gematol. AN GruzSSR, 1956, 6, 39-52.

Abstract: In four cases of ulcers, significant changes
were found in the glandular and parietal tissues
of the pancreas (P), of a chronic inflammatory
process. In 3 cases, with the presence of ul-
cers or gastritis that had recently appeared
in the P, changes were not found, clearly owing

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USSR / Human and Animal Morphology (Normal and Patho- S-3
logical). Digestive System.

Abs Jour: Ref Zhur-Biol., No 17, 1958, 79051.

Abstract: to the short duration of the process. In two cases of pernicious anemia of the P, a typical picture of cirrhosis was observed, with expansion of the interstitial tissue and atrophy of the glandular tissue.

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DZHORBENADZE, A.V., prof.; MAMATELASHVILI, V.G., dots.

[Fundamental techniques of pathoanatomical dissection of farm animals] [Osnovy tekhniki patanatomiceskogo vskrytiia sel'skokhoziaistvennykh zhivotnykh. Tbilisi, Gos. izd-vo uchebno-pedagog.lit-ry "TSodna"] 1962. 290 p. [In Georgian]
(MIRA 17:5)

TATISHVILI, I.Ya.; DZHORBENADZE, A.V.; CHUBINIDZE, A.I.; DEKANOSIDZE, T.I.;
SHANIDZE, V.S.

Vladimir Kaplanovich Zhgenti; on his 70th birthday. Arkh.pat.
no.3:93-94 '62. (MIRA 15:3)
(ZHGENTI, VLADIMIR KAPLANOVICH, 1891-)

SARADZHISHVILI, P.M.; DZHORBENADZE, A.V.; GOKIYELI, T.G.; DEKANOSIDZE, T.I.

Clinical aspect and pathomorphology of acute poliomyalitis in
Georgia. Trudy Tbil. GIDUV 6:95-108 '62. (MIRA 16:2)
(GEORGIA—POLIOMYALITIS)

DZHORENADZE, A.V.; KAKHIANI, Z.N.

Morphological changes of internal organs in hypothermia; an experimental study. Trudy Tbil. GIDUV 6:109-117 '62.

(MIRA 16:2)

(HYPOTHERMIA) (VISCERA--DISEASES)

DZHORBENADZE, A.V.; SHOTADZEM D.P.; KAKHIANI, Z.N.; TSINTSADZE, G.K.

Some complications in modern anesthesia. Trudy Tbil. GIDUV
6:231-238 '62. (MIRA 16:2)
(ANESTHESIA—COMPLICATIONS AND SEQUELAE)

DZHORBENADZE, A.V.

Pathomorphology of experimental typhus fever in guinea pigs
with scurvy. Trudy Inst. eksp. morf. AN Gruz. SSR 11:195-200
'63. (MIRA 17:11)

1. Kafedra patologicheskoy anatomi, patofiziologii i sudebnoy
meditsiny Tbilisskogo gosudarstvennogo instituta dlya usover-
sheniatvovaniya vrachey.

S/12⁴/61/000/008/025/042
A001/A101

AUTHOR: Dzhorbenadze, N.P.

TITLE: On non-stationary flow of viscous liquid in a porous circular annular tube

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 8, 1961, 62, abstract 8B⁴³⁶
("Soobshch. AN GruzSSR", 1960, v. 24, no. 5, 523 - 528)

TEXT: The author analyzes the solution of Navier-Stokes equations for laminar conditions and the case of cylindrical symmetry. The system of non-stationary equations of hydrodynamics is reduced to two regular Volterra equations of the second kind which are solved by conventional methods. The solution, obtained in a closed form, goes over into a known result on the flow of a viscous incompressible liquid between two cylinders, if there is no leakage through the porous walls.

R. Volkov

[Abstracter's note: Complete translation]

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S/683/60/027/000/002/003
B112/B138

10.12.00

AUTHORS: Dolidze, D. Ye., Dzhorbenadze, N. P.

TITLE: Two-dimensional flow of a viscous fluid between inhomogeneous parallel porous walls

SOURCE: Akademiya nauk Gruzinskoy SSR. Matematicheskiy institut.
Trudy, v. 27, 1960, 347 - 357

TEXT: The authors consider a hydrodynamic problem which can be represented by the following boundary value problem for the stream function ψ :

$$\Delta(v\Delta\psi - \psi_t) = u\psi_{yy} - u_y\psi_x + u\psi_{xxx},$$

$$\psi_y \Big|_{y=0} = \psi_y \Big|_{y=h} = 0, \quad \psi \Big|_{t=0} = \psi^o(x, y),$$

$$\psi_z \Big|_{y=0} = -\alpha(t)e^{kx}, \quad \psi_x \Big|_{y=h} = -\beta(t)e^{kx},$$

$\psi(0, h, t) - \psi(0, 0, t) = \gamma(t)$.
The components of velocity, $u(y, t) + v(x, y, t)$ and $w(x, y, t)$, are inter-related with the stream function ψ by the equations $v = \psi_y$ and $w = -\psi_x$.

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B112/B138

Two-dimensional flow of a viscous ...

ψ is assumed to be of the form $\psi(x, yt) = f(y, t) + e^{kx}\varphi(y, t)$. The functions f and φ are determined as follows:
 $f(y, t) = \chi(y, t) - y\chi_y(0, t) - \chi(0, t) - \alpha(t)/k$,

$$\chi(y, t) = \sqrt{\frac{y}{\pi}} \int_0^t [e^{-y^2/4v(t-\tau)} - e^{-(y-h)^2/4v(t-\tau)}] \omega(\tau)(t-\tau)^{-1/2} d\tau,$$

where ω satisfies the integral equation

$$\omega(t) + \int_0^t \omega(\tau)K(t-\tau)d\tau = \delta(t)$$

with

$$K(t-\tau) = \left[\frac{h}{2\sqrt{\pi v(t-\tau)^3}} + \frac{2}{h} \sqrt{\frac{v}{\pi(t-\tau)}} \right] e^{-\frac{h^2}{4v(t-\tau)}} - \frac{2}{h} \sqrt{\frac{v}{\pi(t-\tau)}}.$$

and $\delta = \gamma + (\beta - \alpha)/k$, $\varphi(y, t) = F(y, t) + \phi(y, t)$, where F has the same structure as f and where ϕ satisfies the integro-differential equation

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Two-dimensional flow of a viscous ...

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B112/B138

$$\phi(y, t) = \int_0^t d\tau \int_0^h [a(\eta, \tau) \varphi_{\eta\eta} + b(\eta, \tau) \varphi + \lambda^2 \varphi_{\tau\tau}] G(y, \eta, t - \tau) d\eta$$

$$\text{with } a(y, t) = ku - 2k^2v, \quad b(y, t) = k^3u - ku_{yy} - k^4y, \\ G(y, \eta, t) = S(y, \eta, t) + s(y, \eta, t),$$

$$S(y, \eta, t) = -\frac{1}{2\sqrt{\pi\nu t}} \int_0^y dy \int_0^y e^{-\frac{|y-\eta|^2}{4\nu t}} d\xi \dots \quad (20)$$

$$s(y, \eta, t) = U(y, \eta, t) - yU_y(0, \eta, t) - U(0, \eta, t).$$

U has a similar structure as χ . The integro-differential equation for ϕ is solved by a series expansion with respect to the parameter λ . There are 4 references: 3 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: A. S. Berman, Laminar flow in channels with porous walls, J. Appl. Phys., 24, No. 9, 1953.

SUBMITTED: December 23, 1959
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24,4300

S/251/62/028/004/001/003
I042/I242

AUTHOR: Dzhorbenadze, N.P.

TITLE: Two-dimensional variable flow of a viscous liquid
in a porous round annular pipe

PERIODICAL: Akademiya nauk Gruzinskoy SSR. Soobshcheniya,
v.28, no.4, 1962, 393-400

TEXT: Many publications have appeared on stationary and variable linear systems. This paper considers the variable non-linear problem. The annular pipe is formed by two coaxial cylindrical surfaces with radii r_1 and r_2 ($r_1 < r_2$). The main stream passes through the clearance between the surfaces while seepage takes place through the pores in the cylinders. In a system of cylindrical coordinates the z axis is chosen along the axis of the pipe in the direction of flow. By ignoring gravitational pull and taking advantage

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I042/I242

Two-dimensional variable flow...

of flow symmetry, one can obtain the following equations of motion

$$\begin{aligned} \frac{\partial v_r}{\partial t} + v_r \frac{\partial v_r}{\partial r} + v_z \frac{\partial v_r}{\partial z} &= -\frac{1}{\rho} \frac{\partial p}{\partial r} + \nu \left(\frac{\partial^2 v_r}{\partial r^2} + \frac{\partial^2 v_r}{\partial z^2} + \frac{1}{r} \frac{\partial v_r}{\partial r} - \frac{v_r}{r^2} \right), \\ \frac{\partial v_z}{\partial t} + v_r \frac{\partial v_z}{\partial r} + v_z \frac{\partial v_z}{\partial z} &= -\frac{1}{\rho} \frac{\partial p}{\partial z} + \nu \left(\frac{\partial^2 v_z}{\partial r^2} + \frac{\partial^2 v_z}{\partial z^2} + \frac{\partial v_z}{\partial z} \right), \\ \frac{\partial v_z}{\partial r} + \frac{v_r}{r} - \frac{\partial v_z}{\partial z} &= 0. \end{aligned} \quad (1)$$

where v_r and v_z are the velocity components, t - time, ρ - density, p - pressure, ν - the kinematic coefficient of viscosity. After an extensive mathematical treatment the formula

$$p - p_0 = E_2(r, t) z + E_3(r, t) z^2$$

for the pressure drop is derived, where p_0 is the pressure in the Card 2/3

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I042/I242

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Two-dimensional variable flow...

original cross section.

ASSOCIATION: Akademiya nauk Gruzinskoy SST, Tbilisskiy matematicheskiy institut im. A.M. Razmadze (Academy of Sciences of the Georgian SSR, Tbilisi Mathematical Institute im. A.M. Ramadze)

PRESENTED: January 13, 1962, by N.P. Vekua, Academician

SUBMITTED: January 13, 1962

Card 3/3

Dzhorbenadze, N. P.

S/020/60/133/02/13/068
B019/B060

AUTHORS: Dzhorbenadze, N. P., Sharikadze, D. V.

TITLE: Flow of a Viscous Conducting Liquid Between Two Porous
Planes

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 2,
pp. 299-302

TEXT: The authors assumed for their investigation that a constant homogeneous magnetic field exists perpendicular to the parallel planes. At the same time, liquid enters the interspace through one of the porous walls and leaves through the other porous wall. The amounts of the incoming and outgoing liquid are equal. The solution ansatzes of the main equations for magnetic hydrodynamics are given for the case under consideration. These are the components of the flow velocity of the liquid and those of the magnetic field, and the solutions must satisfy the system of equations (1). The solutions (3) of the system (1) are discussed, and the authors obtain equations (5) and (6) for the velocity

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DZHORBENADZE, N.P.

Two-dimensional nonsteady flow of a viscous liquid in a porous circular annular tube. Soob. AN Gruz. SSR 28 no.4:393-400 Ap '62.
(MIRA 18:1)

1. AN Gruzinskoy SSR, Tbilisskiy matematicheskiy institut im. A.M. Razmadze. Submitted January 13, 1962.

DZHORBENADZE, P.I., inzh.

Seagoing pleasure boat on underwater wings. Sudostroenie no.7:36-
38 J1 '60.
(Boatbuilding) (Planing hulls)

DZHORBENADZE, P.I.

Railroad to Siberian oil. Transp. stroi. 15 no.4:36-38 Ap '65.
(MIRA 18:6)

1. Glavnnyy inzh. proyekta Sibirskogo gosudarstvennogo proyektno-izvukatel'skogo instituta Gosudarstvennogo proizvodstvennogo komieta po transportnomu stroitel'stvu SSSR.

VASIL'EV, S. S.; KHANAAZHAV, L. T.; DZHORDZH, E. T.; SHAVTVALOV, L. Ya.

"The Investigation of $\rho\tau$ Spectra of Ne¹⁹ and Ge⁶⁷ and also the Gamma Radiation of Au^{197m}."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

NIIYaF, MGU
Sci Res Inst Nuclear Physics, Moscow State Univ.

BASHKIROV, A.A., kand.tekhn.nauk; DZHORDZHADZE, P.V., inzh.

Plan for the development of the Inguri River. Gidr. stroi.
32 no.12:1-3 D '61. (MIRA 15:2)
(Inguri River---Power utilization)

DZHORBEADZE, V. I.

"Mediterranean Elements in the Flora of Adzhar." Cand Biol Sci, Inst
of Botany, Acad Sci Georgian SSR, Tbilisi, 1954. (RZhBiol, No 5 Mar 55)

So: Sum. No 670, 29 Sept 55 - Survey of Scientific and Technical Dissertations
Defended at USSR Higher Educational Institutions (15)

DZHORDZHADZE, V.A.; BERNZOVA, Ye.P., doktor biologicheskikh nauk, professor;
BUSHINSKIY, V.P., akademik; GERASIMOV, V.P., dandidat pedagogicheskikh
nauk; DOBROLYUBOVA, Ya.M., dotsent; IVANOV, P.P.; IMSHENETSKAYA, L.I.;
TEREKHOV, V.D., redaktor; YUSFINA, N.L., tekhnicheskiy redaktor

[Publicizing the natural sciences in connection with practical problems
in agriculture] Propaganda estestvennonauchnykh znanii v sviazi s
prakticheskimi zadachami sel'skogo khoziaistva. Moskva, Gos. izd-vo
kul'turno-prosvetit. lit-ry, 1956. 158 p. (MLRA 9:11)
(Agriculture--Study and teaching)

* YUGOSLAVIA / Farm Animals. Cattle.

Q

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40435.

Author : Peyvich Obren M., Dzhordzhevich Jovan. Stefanovich Radosav.

Inst : Not given.

Title : The Changes of the Quality of Fat, Casein and Proteins in the Milk of Domestic Simmenthal Cows During a Period of Three Complete Lactations.

Orig Pub: Zb. radova Pol'oprivrednog fak. Un-t Beogradu, 1956, 4, No 1, 126-142.

Abstract: On the basis of three years of experimentation (1951-1953), it was established that the fat content in the milk of the Simmenthal cows ranged from 3.43% to 4.90% (the average amount was about 3.9%). The fat content in the milk

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24

ARSENISHVILI, K.I., doktor tekhn. nauk, prof.; DZHORDZHANELI, G.,
red.; KHUTSISHVILI, V., tekhn. red.

[Effect of roll-waves on hydraulic structures] Vozdeistvie nabe-
gaiushchikh voln na gidrotekhnicheskie sooruzheniya. Tbilisi,
Gos.izd-vo "Sabchota Sakartvelo," 1961. 183 p. (MIRA 15:6)
(Waves) (Hydraulic structures)

ERISTAVI, E.I.; BROUCHEK, F.I.; DZHEDZHANISHVILI, G., rec.

{Physicochemical study of Borzhomi mineral water}
Fiziko-khimicheskoe issledovanie mineral'noi vody
Borzhomi. Tbilisi, Sabc ota sakartvelo, 1964. 76 p.
(MIR 17:11)
1. Chlen-korrespondent AN Gruz.SSR (for Eristavi).

DINKULESKU, T. (Dinculescu, T.); SICICHESCU, K. (Stoicescu, C.);
DZHORDEHESCU, G. (Rumynie) (Georgeacu, G.)

Electromyographic observations of muscular contractures in
arthrosis and spondylosis. Vop. kur., fizioter. i lech.
fiz. kul't. 28 no.4:340-343 Jl-Ag '63. (MERA 17,9)

1. Iz Instituta kurortologii i fizioterapii v Bukhareste
(dir.- prof. T. Dinkulesku).

BOEV, Petur; ENUKESCU, T. [Enachescu, T.]; POP, S.; DZHORDZHESKU, Vl.
[Georgescu, Vl.]; BONEVA, L.

Anthropologic study of the Bulgarians of the village of
Vinga (Banat). Izv inst morf BAN 7:109-147 '63.

1. Sekretar i chlen na Redaktsionnata kolegiia, "Izvestiia
na Instituta po morfologiiia" (for Boev).

SINITSYN, Vladimir Vladimirovich; DZHORDZHI, A.N., ved. red.;
STAROSTINA, L.D., tekhn. red.

(Foreign lubricating greases) Zarybezhnye (konsistent-
nye) smazki. Moskva, Gostoptekhizdat, 1963. 135 p.
(MIRA 17:2)

PRANULIS, Mikhail Faddeyevich; KUSHELEV, V.P., retsenzent; DZHORDZHI,
A.N., ved. red.; YAKOVLEVA, Z.I., tekhn, red.

[Safety measures in petroleum refineries]Tekhnika bezopasnosti
na neftezavodakh. Izd.2., perer. i dop. Moskva, Gostoptekh-
izdat, 1962. 208 p.
(MIRA 16:2)
(Petroleum refineries--Safety measures)

KRASYUKOV, Aleksandr Fedorovich; DZHORDZHI, A.N., vedushchiy red.;
KATSNEL'SON, M.M., red.; YAKOVLEVA, Z.I., tekhn. red.

[Petroleum coke; technology and properties] Neftianoi koks;
tekhnologiya, svoistva. Moskva, Gostoptekhizdat, 1963.
161 p. (MIRA 16:6)
(Petroleum coke)

LEVCHENKO, Yelizaveta Sergeyevna; BOBKOV, Yelena Nikolayevna;
PONOMAREVA, Yelena Andreyevna. Prinimal uchastiye
ZERNYSHKO, T.A., st. nauchn. sotr.; DZHORDZHI, A.N.,
ved. red.; STAROSTINA, L.D., tekhn. red.; YAKOVLEVA,
Z.I., tekhn. red.

[Petroleums of the Northern Caucasus] Nefti Severnogo
Kavkaza; spravochnaia kniga. Moskva, Gostoptekhizdat,
1963. 335 p. (MIRA 16:10)

1. Krasnodarskiy filial Vsesoyuznogo nauchno-issledovatel'-
skogo neftegazovogo instituta (for Zernyshko).
(Caucasus, Northern--Petroleum--Analysis)

PAPOK, K.K., prof., doktor tekhn. nauk, red.; SEMENIDO, Ye.G.,
prof., doktor tekhn. nauk, red.; DZHORDZHI, A.N., ved. red.;
LEVINA, Ye.S., ved. red.; TITSKAYA, B.F., ved. red.

[Motor and jet-engine oils and fluids] Motornye i reaktivnye
masla i zhidkosti. 4. perer. i dop. izd. Moskva, Izd-vo
"Khimia," 1964. 704 p. (MIRA 17:4)

DZHORDZHIKIYA, V.D.

Screen for the analysis of electrocardiogram. Klin.med., Moskva 29
no.5:80 May 1951. (CLML 20:9)

1. Of the Institute of Health Resort Therapy of Abkhaz ASSR
(Director--Prof. A.L. Grigoliya), Sukhumi.

DZHDOROZHIIYA, V.D.; VOYTSEKHOVSKIY, YE. YE.

Capillaries

Portable apparatus for the study of capillary fragility. Klin. med. 30, no. 7,
1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

DZHORDZHIKIYA, V. D.

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Name	Title of Work	Nominated by
Dzhordzhikiya, V. D.	"Ritsa-Avadkhara" (Statistics of Illness)	Ministry of Health Georgian SSR

SO: W-30604, 7 July 1954

IZHORDZHIKIYA, V.D.; VOYTSEKHOVSKIY, Ye.Ye.; GRIGOLIYA, A.L., professor, direktor.

Graphic registration of the mechanical effect of cardiac and vascular activity.
Terap.arkh. 25 no.3:53-58 My-Je '53. (MLRA 6:9)

1. Abkhazskiy filial Instituta kurortologii Gruzinskoy SSR.
(Cardiovascular system)

Abkhazskiy filial Instituta kurortologii Gruzinskoy SSR.

DVIDEYGURI, T.D.; DZHORDZHIKIYA, V.D.

Simplified method of prolonged graphic registration in physiological experiments. Fiziol. zh. SSSR 39 no. 1:105-106 Jan-Feb 1953.

(CIML 24:2)

1. Institute of Health Resort Therapy of Abkhaz ASSR, Sukhumi.

DZHONZHIKHA, V. D.

DZHONZHIKHA, V. D- "Electrocardiographic and Hemodynamic Changes in Climato-balneotherapeutic Treatment of Cardiovascular Diseases at the Mountain Curing Place Avadkhar (Abkhaziya)." Acad Sci USSR, Inst of Physiology imeni I. P. Pavlov, Leningrad, 1955 (Dissertations for Degree of Candidate of Medical Sciences)

SO: Knizhnaya Letopis' No. 26, June 1955, Moscow

GRIGOLIYA, A.L.; DATESHIDZE, D.G.; DZHORDZHIKIYA, V.D.; KALANDIYA, T.P.

Results of compound spa therapy for hypertension at Sukhumi. Vop.
kur., fizioter. i lech.fiz.kul't. no.4:3-9 O-D '55. (MIRA 12:12)

1. Iz Abkhazskogo filiala Instituta kurortologii Gruzinskoy SSR
(dir. - prof. A.L. Grigoliya).

(CLIMATE,
climatother. of hypertension)
(HYPERTENSION, therapy,
climatother.)

BLANUTSA, S.G.; DZHORDZHIKIYA, V.D. (Sukhumi)

Difference between oscillographic and auscultative values of maximum arterial pressure. Vrach.delo no.5:533-535 My '59. (MIRA 12:12)

1. Abkhazskiy filial instituta kurortologii Gruzii.
(AUSCULTATION) (OSCILLOGRAPHY) (BLOOD PRESSURE)

DZHORDZHIKIYA, V.D.; KULESHOV, V.B.

Regarding the propagation of the pulse wave. Klin.med. 38
no.6:139-141 Je '60. (MIRA 13:12)
(PULSE)

DZHORDZHIKIYA, V.D., kand.med.nauk

Method for determining the rate of pulse wave spreading. Vrach.
de lo no.10:140-141 0 '62. (MIRA 15:10)

1. TSkhaltubskiy filial Instituta kurortologii Gruzii.
(PULSE)

Dmitrieva, V.D.; PIROGOVA, A.F.

Device for the precise marking of points of precordial examination. Kardiologija 5 no.2:32-83 Mr-Ap '65. (MIRA 18:7)

1. TSkhaltubakly filial (direktor - kand. med. nauk S.A.Sanadze) Instituta kurortologii (direktor - doktor med. nauk, prof. V.G. Gogibedashvili) Gruzinskoy SSR.

49-5-18/18

AUTHOR: Dzhordzhio, N. V.

TITLE: Certain results of the electro-photometric measurements
of the Aurora Borealis. (Nekotoryye rezul'taty elektro-
fotometricheskikh izmereniy Polyarnykh Siyanii).

PERIODICAL: "Izvestiya Akademii Nauk, Seriya Geofizicheskaya"
(Bulletin of the Ac.Sc., Geophysics Series), 1957, No.5,
pp. 692-695 (U.S.S.R.)

ABSTRACT: At the end of 1955 a universal electro-photometer was
built for studying the illumination of the night sky and
of the Aurora Borealis. In March, 1956 this electro-
photometer was tested at the Northern Scientific Station
of the Institute of Physics of the Atmosphere, Ac.Sc.
during which certain values of the absolute intensities of
the Aurora Borealis and of the illumination of the night
sky were obtained. In this paper the design of the electro-
photometer is described, giving also some of the measured
results. A diagram of the optical system and the block
schematics of the photometer are shown in Fig.1, the circuit
diagram of the amplifier system is shown in Fig.2. Some of
the obtained results are plotted in Figs. 3-6. The error
of reading from the automatic recording instruments does not
exceed 2% for the violet range and 10% for the green range

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49-5-18/18

Certain results of the electro-photometric measurements
of the Aurora Borealis. (Cont.)

in which the galvanometer readings for the night sky were
low.
There are 6 figures, 1 table and 4 references, 3 of which
are Slavic.

SUBMITTED: June 4, 1956.

ASSOCIATION: Ac.Sc. U.S.S.R. Institute of Physics of the Atmosphere.
(Akademiya Nauk SSSR Institut Fiziki Atmosfery).

AVAILABLE: Library of Congress

Card 2/2

S/169/60/000/007/005/016
A005/A001

Translation from: Referativnyy zhurnal, Geofizika, 1960, No. 7, p. 196, # 8431

AUTHOR: Dzhordzhio, N.V.

TITLE: Electrophotometric Measurements in the Polar Aurora Zone

PERIODICAL: V sb.: Spektr. elektrofotometr. i radiolokats. issled. polyarn. siyaniy i svecheniya nochn. neba. No. 1, Moscow, AN SSSR, 1959, pp. 30-40 (Engl. summary)

TEXT: Electrophotometric observations of the night sky glow in the zenith were performed at the Loparskaya station in the special ranges λ 4278, 5300, 5577, 5893, 6300 Å. Also reference sections of aurorae in the spectral regions of λ 4278, 5577, 6300 Å were observed from September 1957 to March 1958. It turned out that the intensity of the night sky glow in north is 1.5-2 times higher than at medium latitudes. It is possible that this fact is expianable by the coontinuous presence of weak diffuse aurorae. The emissions at λ 5577, 6300, 5893 Å are strongly blended with the molecular N₂- and N₂⁺-bands, when measuring with wide-band interference light-filters; the emission at λ 4278 Å is relatively

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S/169/60/000/007/005/016
A005/A001

Electrophotometric Measurements in the Polar Aurora Zone

free from blending. A continuous background in pure form can be obtained only in the section from 4450 to 4600 Å. Because the distribution of intensity over the continuous spectrum of aurorae is not determinable, it was not considered in the treatment. The ratios I_{6300}/I_{5577} and I_{4278}/I_{5577} are presented for the various types of aurora. The variations of I_{6300} in the red aurorae are not correlated with the variations of I_{5577} and I_{4278} . It is shown that the main part of energy of the main aurora emissions is concentrated in the background, which surrounds the bright formations. The pulsing aurora spots in the wavelengths 5577 and 3914 Å were studied. The modulation factor characterizing the relative magnitude of variations in the number of molecules being in excited state amounted to about 0.6 for $\lambda 3914$ Å. Pulsations at $\lambda 5577$ Å lag behind the pulsations at 3914 Å by 1.5 sec. Wave-like motions of the luminous formations were observed, the propagation velocity of them appeared equal to about 9 km/sec.

L.M. Fishkova

Translator's note: This is the full translation of the original Russian abstract.

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3.1720 (1041, 1127, 1129)
3,511,0

26986

8/049/60/000/012/010/011
D214/D305AUTHOR: Dzhordzhio, N.V.

TITLE: Polarization of certain emissions of the polar aurora

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya,
no. 12, 1960, 1847 - 1851

TEXT: This paper reports measurements and a discussion of the degree of polarization of radiation of various wavelengths occurring in the polar aurora. The suggestion that polarization should be found, was first made by V.L. Ginzburg (Ref. 1: O polyarizatsiy li- niy v spektre svecheniya nochnogo neba i polyarnykh syaniy (On the Polarization of Lines in the Spectrum of Luminosity of the Night Sky and the Polar Aurora) Dokl. AN SSSR, 38, No. 8, 1943), and R. A. Duncan (Ref. 2: Polarization of the red oxygen auroral line. Planet, Space Sci., 1, No. 2, 1959) found 30 % polarization of the 6300 Å radiation. The author has made observations between December 1959 and March, 1960 at the Loparskaya station ($\varphi = 68.9^\circ$, $\lambda = 33.3^\circ$)

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Polarization of certain ...

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using an electrophotometer with a quinine sulphate polaroid, which was rotated at 0.25 rev/sec about an axis coinciding with the optical axis of the photometer. The current passing from the photomultiplier was displayed on an oscilloscope together with an impulse showing the completion of a revolution by the polaroid, thus enabling determination of the plane of polarization and the degree of polarization was calculated from the Stokes vector parameters. Observations were made on clear nights, when the sun was more than 18° below the horizon and there was no moon, and an interference filter ($\Delta\lambda = 100 \text{ \AA}$) was used to separate the radiations. Checks were made on the absence of polarization in the system, and allowance was made for background luminosity in the night sky by measuring the degree of polarization at various zenith distances and extrapolating to the position at which the aurora was studied. This contribution was then subtracted from the observed polarization. Observations were normally made during the first phase of the aurora. Results of measurements all show very small degrees of polarization, of the order of 4 %, and the degree is found to drop

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Polarization of certain ... 26986

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with decreasing zenith distance. Wavelengths 4278 Å (N_2^+), 4861 Å (H_β), 5577 Å (OI), 6300 Å (OI), 6545 Å (N_2^-) were studied and, as predicted by V.L. Ginzburg (Ref. 1: Op.cit.), the 5577 Å radiation was always found to be unpolarized. On the same night as no polarization of the 6545 and 6624 Å lines was found, 4278 and 4861 Å were polarized. During the strongly red aurorae at 22.47 on 5.12.59, zenith distance = 65°, and at 00.36 on 31.3.60, zenith distance = 62°, a small (about 2 %) polarization of the 6300 Å line was found, an observation which was later confirmed. Near the zenith, no polarization of the 4861 and 6300 Å lines was found. Polarization of the H radiation is attributed to orientation of motion of the radiating atoms along the magnetic lines of force. That of the other radiations is coupled with the mechanism of excitation of radiation by both primary and secondary electrons. The former move principally along magnetic lines of force and may orient the motion of the excited atoms, and the latter, on Gal'perin's assumption [Abstractor's note: No reference], produce luminescence of molecules alrea-

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D214/D305

Polarization of certain ...

dy oriented in the magnetic field. The 6300 Å line, a magnetic dipole transition, will be radiated parallel to the magnetic dipole of the atom which will have its axis of symmetry along the lines of force. Thus, its polarization will be found to be a maximum in observations perpendicular to the magnetic lines of force, explaining the results of Duncan (Ref. 2: Op.cit.) whose observations were made where the lines of force were inclined at 30° to the vertical, whereas at the Loparskaya station the inclination of the lines of force was only 10°, so that observations made by the author at the zenith were practically the same as observing at the pole, where no polarization would be found. At 10-20° to the horizontal, polarization was found to a smaller degree than by Duncan, explained by depolarizing collisions and by the fact that electrons exciting the luminosity in the lower latitude are apparently less energetic than further north. The increased energy of exciting particles coupled with sharp rises in intensity explains the decrease of polarization found at such times. There are 4 figures, 1 table and 8 references: 3 Soviet-bloc and 5 non-Soviet-bloc. The references to the English-

Card 4/5

Polarization of certain ...

26986

S/049/60/000/012/010/011
D214/D305

language publications read as follows: R.A. Duncan, Polarization of the red oxygen auroral line. Planet. Space Sci., 1, no. 2, 1959; M.I. Seaton, Excitation processes in the aurora and airglow. J. Atmos. and Terr. Phys., 4, 1954; D.R. Bates, The auroral spectrum and its interpretation from physics of the upper atmosphere. London 1960; I.W. Chamberlain, On the polarization of the oxygen red line in aurorae. Planet. Space Sci., 2, no. 1, 1959.

ASSOCIATION: Akademiya nauk SSSR, institut fiziki atmosfery (Academy of Sciences, USSR, Institute of Physics of the Atmosphere) X

SUBMITTED: July 8, 1960

Card 5/5

34358
S/203/61/001/006/019/021
D055/D113

3,1810(1041)

AUTHOR: Dzhordzhio, N.V.

TITLE: Automatic scanning photometer

PERIODICAL: Geomagnetizm i aeronomiya, v. 1, no. 6, 1961, 1005-1008

TEXT: An automatic scanning photometer for recording luminescence of the night sky and polar aurorae is described. The circuits for program control of the photometer and automatic switching of the oscillograph are given. The whole sky in eight almucantars can be scanned in 14 minutes. Luminescence of the night sky is simultaneously observed in four areas of the spectrum (λ 3914, 5577, 5300, 6300 Å), which are separated by interference light-filters. The results of some observations are given. The photometer consists of four pipes, each having its own interference filter ($\Phi = 80$ mm, $\Delta\lambda \sim 100$ Å), entry lens ($D = 80$ mm, $F = 240$ mm), diaphragm of field of vision ($\alpha = 5^\circ$), Fabri lens ($D = 80$ mm, $F = 40$ mm) and an $\phi 9Y-19M$ (FEU-19M) or $\phi 9Y-32$ (FEU-32) photomultiplier, signals from which pass directly to four $\Gamma\delta-3$ (GB-3) loops ($\gamma = 3 \cdot 10^{-9}$ a/mm·m,

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Automatic scanning photometer

S/203/61/001/006/019/021
D055/D113

$f = 1.5 \text{ hz}$) of a ПОБ -12 (POB-12) oscilloscope. The photometer was developed in conjunction with the Design Office of the Institut fiziki Zemli AN SSSR (Institute of Terrestrial Physics, AS USSR) and tested at the Zvenigorodskaya nauchnaya baza Instituta fiziki atmosfery (Zvenigorod Scientific Base of the Institute of Physics of the Atmosphere) in March and April 1961. Several recordings of luminescence intensity were obtained in relative units. An oscilloscope for a low-latitude polar aurora with a ray structure taken on April 15, 1961 shows red luminescence of $\lambda 6300 \text{ \AA}$, green luminescence of $\lambda 5577 \text{ \AA}$ and violet of $\lambda 3914 \text{ \AA}$. The photometer is sensitive enough to record aurorae of intensity 1. There are 4 figures and 3 non-Soviet references. The two English-language references are: E.Duncan, Austral. J. Phys., 1959, 12, no. 2, 197-198; B.J. O'Brien, J.A. Van Allen, F.E. Roach, C.W. Gartlein, J. Geophys. Res., 1960, 65, no. 9, 2759.

ASSOCIATION: Institut fiziki atmosfery AN SSSR (Institute of Physics of the Atmosphere, AS USSR)

SUBMITTED: September 30, 1961

Card 2/2

3,1810

3.919

S/049/62/000/002/005/005
D213/D301

AUTHORS: Troitskaya, V.A., Al'perovich, L.V. and Dzhordzhio,
N.V.

TITLE: On the relation between short-period pulsations in
the electromagnetic field of the earth and polar
auroras

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofiziches-
kaya, no. 2, 1962, 262-270

TEXT: In order to investigate the nature of short period
irregular pulsations (SIP), the authors have carried out an analysis
of SI's in the electric and magnetic fields of the earth at the
Lovozero Station, and of visual and electrophotometric observations
of polar auroras at the Loparskaya Station. Tapes from the Murmans-
kaya variatsionnaya stantsiya IZMIRAN (Murmansk Variational Station
of IZMIRAN) were also used in the analysis. Details of the appara-
tus employed were reported by O.M. Barsukov and V.A. Troitskaya
(Ref. 1: Soviet Earth-Current Stations, IGY, 1959). An analysis has

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3/049/62/000/002/005/005

On the relation between short-period... D213/D501

also been made of the correlation between the SIP's and the electro-photometric observations of the auroras. The correlation between the SIP's and auroral forms was as follows: rays (93%), bands with ray structure (36%), draperies (100%), corona (82%), feeble glow (92%), homogeneous bands (73%), homogeneous quiet arcs (76%), diffused luminous surfaces (80%), pulsating surfaces (85%). These correlations are based on a total number of 472 electrophotometric measurements. The short period pulsations are the fine structure of bays and other forms of geomagnetic field disturbances, and their periods lie between 1 and 20 seconds, with a most probable value at about 5-6 seconds. A preliminary analysis of the distribution of short period pulsations over the globe shows that the entry of corpuscular streams, giving rise to the pulsations, into the Arctic or Antarctic region may be both symmetric and nonsymmetric. There are 3 figures 2 tables and 14 references: 6 Soviet-bloc and 8 non-Soviet-bloc.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki zemli (Academy of Sciences, USSR, Institute of Physics of the Earth)

SUBMITTED: May 18, 1961

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3.5/20 ,

41179
S/169/62/000/009/106/120
D228/D307

AUTHOR: Dzhordzhio, N. V.

TITLE: Night sky observation near the auroral zone

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 14, abstract 9G120 (In collection: Polyarn. siyaniya i svercheniye nochn. neba, no. 8, M., AN SSSR, 1962, 15-16 (summary in Eng.))

TEXT: Night sky radiation was observed at Stn. Loparskaya in the IGY period by means of an electrophotometer in 5 spectral regions: 4278, 5300, 5577, 5893, and 6300 Å. Observations were made once an hour, on clear moonless nights, when the sun had sunk more than 18° below the horizon. Airglow was reckoned to be "pure" when there were no visible auroral forms, and the band $(0.1)NGN_2 + \lambda 4278 \text{ \AA}$ had an intensity of ~ 40 rayleighs. About 600 airglow and auroral observations were carried out in all. The intensity corresponded to the airglow on 107 occasions. The diurnal variation of the air-

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Night sky observation ...

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glow observation probability had a minimum around midnight and a maximum in the morning and evening. The airglow intensity was found to be 1.5 - 2 times higher than in middle latitudes. The sky brightness was measured on a photometer with a 5577 Å filter every 10° of zenith distance in planes; passing north-south and west-east. A region with an extent of ~700 km was covered in this way. The ratio of glow intensities, measured in a north-south plane at different zenith distances, to the corresponding average intensities, measured in an east-west plane at the same zenith distances, was calculated from these data. The 5577 Å emission intensity grew monotonously northwards and reached a 1 1/2-fold increase with respect to the zenith. Geomagnetic latitudes, corresponding to different zenith angles, were calculated according to the observation point's latitude (at a glow layer height of ~100 km). Starting from geomagnetic latitude 65°, the glow intensity was found to increase sharply. *(Abstracter's note: Complete translation.)*

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D228/D307

AUTHOR: Dzhordzhio, N.V.

TITLE: Auroral flicker regularities

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1962, 21-22,
abstract 11G145 (In collection: Polarn. siyaniya i
svecheniye nochn. neba, no. 8, M., AN SSSR, 1962,
17-20 (summary in Eng.))

TEXT: Auroral pulsations appear in different forms. There
are either entire pulsating arcs, flickering throughout their length,
or discontinuous arcs, consisting of separate pulsating parts. Pulsating
spots, which exist in one place for a long time, are of
special interest. Pulsations are usually observed in the second
half of the night, after the maximum auroral flash. Pulsating forms
sometimes do not happen to be bright. Judging from spectroscopic
results, the emission spectrum in pulsations does not differ from
the usual green glow spectrum. In this respect it is interesting to
ascertain the physical cause of flow pulsations; in particular,
whether pulsations reflect the character of primary exciting parti-

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Auroral flicker regularities

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cles or they are the result of secondary effects. To study the behavior of the intensity of different emissions in pulsating forms, the simultaneous multichannel recording of the glow intensity was carried out at Stn. Loparskaya from January 1958 to December 1959 by three electro-photometers with parallel axes and different interference filters. Analysis of the resulting data allowed certain regularities of the phenomenon under study to be exposed. Observations showed that the course of the intensity of the emissions $\lambda 6545 \text{ \AA}$ (7.4) 1 PGN₂, $\lambda 5914 \text{ \AA}$ (0.0) 1 NGN₂⁺, $\lambda 5577 \text{ \AA}$ (01), of the background of about $\lambda 4861 \text{ \AA}$, and of the integral luminous flux is repeated down to the finest details. The phenomenon discovered shows that emissions creating most of the glow in the visible spectral region are excited synchronously, and that there is a linear relation between their intensities. The fact that pulsating forms exist long in one place evidently indicates the connection of this phenomenon with the earth's magnetic field. But rapid, mostly non-harmonic variations of the glow intensity in a limited region of space would hardly reflect the integral phenomenon -- geomagnetic field variations in the earth's outer atmosphere. If flickers were

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related to a change in the energy of incoming particles, the emissions would have a different width. Radiation splashes of emissions with a higher excitation level would be a transitory emission of radiation splashes from lower levels. This is not observed, however. Short-period glow oscillations evidently arise at the expense of the irregularity of corpuscle inflow, though this can be ascertained definitely only from direct methods of corpuscular flow investigation. The relation of the duration of splashes to their amplitude and the course of the probability of appearance of the flicker-splash repetition rates were plotted on the grounds of the data obtained. The graph shows that the amplitudes of splashes are almost independent of their duration.

[Abstracter's note: Complete translation]

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S/269/63/000/004/022/030
A001/A101

AUTHOR: Dzhordzhio, N. V.

TITLE: Night sky observations near an auroral zone

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 4, 1963, 64, abstract
4.51.500 (In collection: "Polyarn. siyaniya i svecheniya nochn.
neba. no. 8", M., AN SSSR, 1962, 15 - 16, English summary)

TEXT: The night airglow emission was observed in five bands of spectrum:
 $\lambda\lambda$ 4,278, 5,300, 5,577, 5,893 and 6,300, at the Loparskaya station during the
International Geophysical Year. The observations were conducted by means of an
electrophotometer, once an hour, in clear moonless nights, at the Sun depression
of more than 18° below the horizon. The airglow was considered to be a "purely
night glow" when visible auroral forms were absent, and the band (0,1) 1 NGN₂ +
+ λ 4,278 had an intensity of ~ 40 rayleighs. The total number of observations
of night airglow and auroras was ~ 600. In 107 cases the intensity corresponded
to the night airglow. The diurnal curve of probability to observe the night
airglow had a minimum about midnight and maxima in evening and morning hours.

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Night sky observations near an auroral zone

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The intensity of night airglow proved to be higher, by a factor of 1.5 - 2, than in mid-latitudes. The brightness of the firmament was measured with a photometer with a $\lambda 5,577$ filter through every 10° of zenith distance, in planes passing through north-south and west-east. Thus a region of ~ 700 km was covered. Using these data, the ratio of glow intensities was calculated, measured at different zenith distances, in the plane north-south, to the corresponding mean intensities measured at the same zenith distances in the plane west-east. The intensity of emission $\lambda\lambda 5,577$ increased monotonously toward the north and attained an one-and-half increase with respect to the zenith. Geomagnetic latitudes corresponding to different zenith distances were calculated from the latitudes of observation station (at the height of the luminous layer being ~ 100 km). It turned out that glow intensity increased sharply beginning from the 65° geomagnetic latitude.

N. Rudometkina

[Abstracter's note: Complete translation]

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S/269/63/000/004/023/030
A001/A101

AUTHOR: Dzhorizhio, N. V.

TITLE: Regularities in auroral scintillations

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 4, 1963, 64 - 65, abstract 4.51.501 (In collection: "Polyarn. siyaniya i svecheniye nochn. neba. no. 8", AN SSSR, 1962, 17 - 20, English summary)

TEXT: Intensities of various emissions in auroral pulsating forms were studied by multichannel intensity recording at the station Loparskaya from January 1958 to December 1959; three electrophotometers with parallel axes and different interference filters were used. An analysis of the data obtained made it possible to reveal some regularities of the phenomenon studied. The observations have shown that the variation of intensities of emissions λ 6,545 (7,4) 1 PGN₂; λ 3,914 (0,0) 1 NGN₂ +, λ 5,577 (01), background near λ 4,861 and integrated light flux, is repeated up to the finest details. The phenomenon discovered shows that emissions giving rise to the main fraction of glow in the spectrum visible region, are excited synchronously, and that there is a linear

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Regularities in auroral scintillations

relationship between their intensities. The fact that pulsating forms exist for a long time at the same place indicates, apparently, a relation of this phenomenon to the Earth's magnetic field. However, rapid, most often unharmonic fluctuations of glow intensity in a confined region of space can hardly reflect an integrated phenomenon, i.e., fluctuations of the geomagnetic field in the Earth's outer atmosphere. Apparently, short-periodic glow fluctuations arise due to non-uniformity of particle influx; however, only direct methods of investigating corpuscular fluxes can clear up this problem. On the basis of the data obtained, a dependence of burst duration on their amplitude was plotted, as well as the variation of probability of frequency sequence of scintillation bursts. The graphs show that burst amplitudes do not practically depend on their duration.

L. Yerasova

[Abstracter's note: Complete translation]

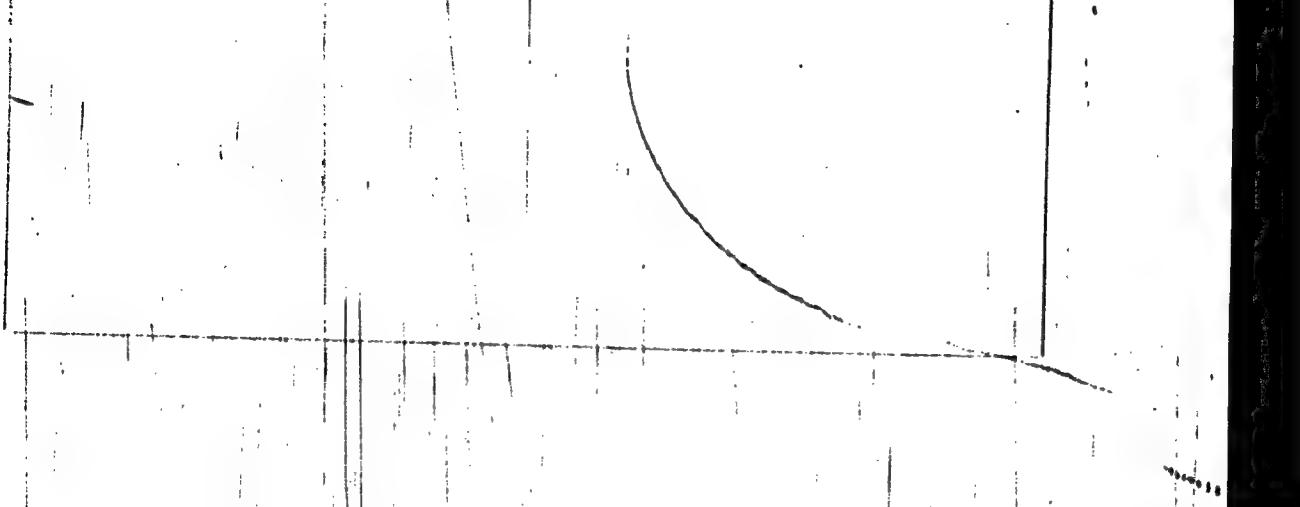
Card 2/2

D2110 RD2110, N. V.

KRASOVSKY, L.I., GALPERIN, YU.I., DEMONENKO, N.V., MULYARCHIK, T.N.,
BOLUNOVA, A.D.

Soft Corpuscular Radiation

Report to be submitted for the 4th International Space Science Symposium
(COSPAR) Warsaw, 2-12 June 6)



GAL'PERIN, Yu.I.; KRASOVSKIY, V.I.; DZHORDZHO, N.V.; MULYARCHIK, T.M.;
BOLYUNOVA, A.D.; TEMNYY, V.V.; MAROV, M.Ya.

Studying the upper atmosphere with the aid of the satellites
"Kosmos-3" and "Kosmos-5." Kosm. issl. 1 no.1:126-146
Jl-Ag '63. (MIRA 17:4)

L 18946-63 EWT(1)/EWT(m)/FCC(w)/FS(v)-2/BDS/ES(v)/EEC-2 AFFTC/ASD/
AFMDC/ESD-3/APGC Pe-4/Pi-4/Po-4/Pq-4 TT/GW 89
ACCESSION NR: AP3007341 S/0293/63/001/001/0132/0139 88

AUTHOR: Krasovskiy, V. I.; Gal'perin, Yu. I.; Dzhordzhio, N. V.; Mulyarchik, T. M.; Bolyunova, A. D.

TITLE: Study of the upper atmosphere by means of the Cosmos 3 and Cosmos 5 satellites. 2. Soft particles

SOURCE: Kosmicheskiye issledovaniya, v. 1, no. 1, 1963, 132-139

TOPIC TAGS: Cosmos satellite, Cosmos 5, geoactive particle, ionospheric particle, ionospheric current, ionospheric field, ion, ion counter, particle counter, Cosmos 3

ABSTRACT: This is the second in a series of four articles on geoactive particle research conducted during the Cosmos 3 and Cosmos 5 orbital flights. This article discusses the existence of currents of electrons and positive ions in the upper ionosphere having energies that are relatively low but greater than thermal. This was concluded from fluxes detected by the two types of particle counters used: 1) a sensor formed of a fluorescent screen and

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photomultiplier, which was biased negatively and also shielded with Al foil so as to register only electrons above 40 ev and positive ions whose free path exceeded the foil thickness (e.g., protons of the order of 200 Kev); 2) an ion trap which registered electrons of 5 Kev or more and positive ions. The trap counters showed repeated instances of anisotropic positive ion flow in a direction normal to the geomagnetic force lines; the fact that no simultaneous indications appeared in the indicator screen type counters thus suggests that these must have been "soft" positive ions; if protons, their energy would be less than 200 Kev. This conclusion is supported by the fact that when the satellite had turned 180° the indicator counters in turn registered particles not sensed by the ion traps, which were evidently electrons below 5 Kev. There thus are areas which exhibit local current flow, in which positive ion energies are estimated to be several dozen electronvolts and average density is 10^8 ion/cm²/sec/ster. These areas are in the 200- to 600-km region and tend to remain at the same earth latitudes for prolonged periods, sometimes as much as 9 hours. The authors emphasize that complete determination of the orientations of the

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ACCESSION NR: AP3007341

Cosmos 3 and Cosmos 5 satellites during flight is not yet complete, but sufficient data are available to verify the above results. Additional observations are made of some high-energy particles, particularly those registered in the South Atlantic geomagnetic anomaly. If these had been positive ions, the ion trap count, being the algebraic sum of incoming particles, would have been phase opposed to the indicator count, which records the absolute sum; since, however, both counters registered such particles in phase, they must have been electrons, estimated at between 50 Kev and 1 Mev and at an omnidirectional density of $5 \times 10^7/\text{cm}^2/\text{sec}$. Regarding electron counting technique, the possibility of spurious effects caused by the fields of on-board transmitting antennas, principally that of the telemetry transmitter, is rejected since no difference in electron count was noted whether the transmitters were on or off. The intensity and anisotropy of recorded electron currents agree with earlier data from the 1958 Sputnik and from the U.S. "Injun" rocket of 1961. Fig. 1 of the Enclosure shows examples of electron intensity isolines over the South Atlantic taken by Cosmos 3. Orig. art. has: 7 figures.

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EWT(1)/FCC(w)/FS(v)/BDS/ES(v) --AEDC/AFFTC/AFMDC/ESD-3--

Pe-4/Pg-4/P1-4/P1-4/Pc-4/Pq-4--TT/GW

ACCESSION NR: AP3000792

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AUTHOR: Krasovskiy, V. I.; Gal'perin, Yu. I.; Temnyyy, V. V.; Mulyarchik, T. M.; Dzhordzhio, N. V.; Marov, M. Ya.; Bolyunova, A. D.; Vaisberg, O. L.; Potanov, B. P.; Bragin, M. L.

TITLE: Some characteristics of geoactive particles

SOURCE: Geomagnetizm i aeronomiya, v. 3, no. 3, 1963, 401-407

TOPIC TAGS: geoactivity, Cosmos-3, Cosmos-5, satellite, particle counter, ionospheric particles, Kosmos-3, Kosmos-5

ABSTRACT: Three types of charged-particle sensors used on the Cosmos-3 and Cosmos-5 flights are described and some recorded results are discussed. One type was an aluminum tube which housed a fluorescent screen whose photoemission from particle impact was recorded by a photomultiplier. The screen was faced with aluminum foil of 0.4 to 1.1 mg/cm² thickness to prevent passage of low-energy particles. Grids placed at the tube entrance included an accelerating grid for applied stepped voltages of up to 11 kv and a bias grid at -40 v to prevent impact of thermal electrons on the foil. The fluorescent screen was made thin (1.4 mg/cm²) so as not to respond to x-ray radiation. Each such

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indicator subtended about 1/12 steradian and had its axis normal to the satellite rotational axis; each satellite had several indicators. A second tubular device, acting as a trap for high-speed protons and electrons, was similar in construction but had an annular collecting electrode placed in a permanent-magnet field rather than a screen. The bias grid in this case eliminated electrons of less than 5 kev. Angular coverage of the trap counter was about 1 steradian. The third collector used was a standard Geiger counter, type STS-5, which was inside the satellite skin and had a 3-mm lead shield to minimize x-ray effects. This counter responded only to electrons above 0.4 Mev and protons above 50 Mev, but is described as too primitive to distinguish their relative contributions. Results from the three types of recorders are discussed as functions of satellite altitude, latitude, and day/night exposure. Three general energy groupings appear to exist: 1) electrons of 10^2 – 10^4 ev at maximum flux density of 10^8 el/cm²/sec/ster, observed at levels above 300 km over the USSR (30–35° N); 2) electrons of about 100 kev, with a maximum density of 2×10^7 el/cm²/sec/ster, noted mainly in southern latitudes at altitudes of 600–700 km over the South Atlantic; and 3) the very high energy protons and electrons registered by the Geiger counter at peaks of 100 pulses/cm²/sec/ster [not associated with any particular geographical region]. Orig. art. has: 7 figures.

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L 10799-63 EWT(1)/FCC(v)/FS(v)/BDS/ES(v)--AEDC/AFFTC/ASD/AFMDC/ESD-3/
APOC--Pe-4/Pg-4/P1-4/P1-4/Po-4/Pq-4--TT/CW

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ACCESSION NR: AP3000793

s/0203/63/003/003/0403/0416

AUTHOR: Krasovskiy, V. I.; Gal'perin, Yu. I.; Temny*y, V. V.; Mulyarchik, T.M.;
Dzhordzhio, N. V.; Marov, M. Ya.; Bolyumova, A. D.

TITLE: Some new results of geophysical studies made by Kosmos-3 and Kosmos-5 satellites

SOURCE: Geomagnetizm i aeronomiya, v. 3, no. 3, 1963, 408-416

TOPIC TAGS: Kosmos-3, Kosmos-5, radiation belt, particle counter, upper atmosphere radiation, radiation, upper atmosphere Cosmos-3, Cosmos-5

ABSTRACT: Concentrations and intensities of charged particles as measured by the Kosmos-3 and Kosmos-5 satellites are analyzed. The satellites used combinations of three types of recorders¹: 1) a collector tube with fluorescent screen sensor and photomultiplier, 2) an ion trap with a ring electrode collector located in a permanent magnetic field, and 3) a Geiger counter with a 3-mm lead shield, which registered only electrons above 0.4 Mev and protons above 50 Mev. Particles recorded by these sensors fell into three energy

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